

Begleitpflanzen *Euphorbia polygonifolia* Jacq. Ca. 117 m. ü. d. M: 17 July, 1900," *A. Kneucker*: Gramineae exsiccatae, no. 115. Type collection of *E. pilosa* var. *condensata* Hackel; Botanic Garden, Berlin, Aug. 2, 1877, *P. Magnus*. POLAND: Between paving stones, escaped, Warsaw, Sept., 1885, *Przybulski*. JAPAN: Plants of the Liu Kiu Islands, collected for L. Boehmer & Co. in 1904, no. 174. NEW HAMPSHIRE: Cheshire County; dry roadside, Alstead, Aug. 2, 1900, *M. L. Fernald*, no. 360. NEW JERSEY: Gloucester County; Mickleton, Aug., 1887, *B. Heritage*. PENNSYLVANIA: Lancaster County; Vicinity of Lancaster, Sept., 1889, *J. K. Small*. NEW YORK: Tompkins County; in gravel and cinders between railroad ties, Ithaca, Aug. 12, 1914, *K. M. Wiegand*, no. 1669.

CORNELL UNIVERSITY, Ithaca, New York.

RANGE OF *CAREX NOVAE-ANGLIAE* EXTENDED INTO PENNSYLVANIA.

BAYARD LONG.

SINCE the appearance of Prof. T. C. Porter's estimable *Flora of Pennsylvania* in 1903, discoveries of indigenous species heretofore unknown in the region have not been so overwhelmingly numerous that they are without a certain interest. Some index of the almost exhaustive exploration which Prof. Porter and his associates succeeded in achieving over an area of really very considerable size and diversity is shown by the fact that only about one in ten of the additions in recent years is an indigenous species which was well known in Porter's day. For it will be remembered that in the numerical count of species there are two main sources of so-called "additions" to the flora of any well known area: new introductions and species due to work of more recent revision and segregation. In these two categories are unquestionably included the great majority of species (now known to occur in the state) which are not recognized in Porter's *Flora*.

As a further suggestion of the completeness of Porter's Pennsylvania collection may be noted the fact that it contains an excellent representation of species recently described or ones only lately recognized as elements of our flora. Thus, for example, there is ample material from the state of *Echinochloa muricata*, *Muhlenbergia foliosa*,

and *Carex incompta*. There is a representation of *Carex laevivaginata*, *C. projecta*, and *Dioscorea glauca*. Even some very rare Pennsylvania plants had been obtained in several cases. Of that interesting sedge known as *Rynchospora Smallii* Britton, thus far found at only four localities in the state, the Pennsylvania assignment with the original description is based upon material collected by Porter in Chester County — a fact not very commonly known.

It may not even be asserted with confidence that all of the additional native species, recognized in Porter's time but not recorded by him from Pennsylvania, were entirely unknown to him from this area. For, although he was one of the most acute and discriminating botanists of his day, like any other student he was not completely clear on every critical group. It is found, as a case in point, that although *Carex Bicknellii*, as a name, was well known to him and that he had excellent Pennsylvania material of it in his herbarium, it was confused with other allies of *C. straminea* in his *Flora*. But it is fairly certain that among real additions to the flora of the state, quite unknown to Porter, may be numbered such plants as *Sporobolus uniflorus*¹ and *Rynchospora fusca*¹ (discovered by Dr. Witmer Stone at Lake Bella Sylva in Sullivan County, August 29, 1903), *Eleocharis Robbinsii*¹ (found by the late Charles S. Williamson, also at Lake Bella Sylva, August 18, 1908), *Allium sibiricum*² (apparently first detected by Mr. Percy Wilson on the Palisades of the Delaware River, in Pike County, opposite Sparrowbush, New York, May 30, 1902), *Fimbristylis puberula*³ (collected by the late Joel J. Carter, in his energetic explorations in Lancaster County, near Eldora Station, July 27, 1910). To this group may be added *Carex novae-angliae* upon the basis of several well authenticated stations in different portions of Pennsylvania.

For a Philadelphian, some of my most pleasant recollections, associated with a delightful week in June, 1907, on the Pocono Plateau, center about the finding of Labrador Tea, Twin-flower, Creeping Snowberry, Small Cranberry, and the like, but they might well be coupled with a much more important discovery — had it been recognized at the time. With Porter's *Flora of Pennsylvania* as a guide I

¹ These species are incidentally recorded, without comment, in the introductory matter of Stone's *The Plants of Southern New Jersey* (Ann. Rep. N. J. State Mus., 1910, 110).

² Taylor, Fl. Vic. N. Y. 233 (1915).

³ Small and Carter, Fl. Lancaster Co. 45 (1913).

had found and distinguished *Carex oligosperma* at Long Pond, had become acquainted with *Carex filiformis* and *C. utriculata*, as well as a number of other northern species of interest in the state, but even with a youthful enthusiasm I had been unable to fathom with more than a modicum of success the intricacies of the more critical groups in *Carex*. In the press of other interests the unnamed Carices from this Pocono trip lay neglected for a long time — during which interval some acquaintance was made with the *Montanae*, among other groups. And when these plants came to be examined again it was with considerable interest that it was discovered that *Carex novae-angliae* had been collected at Pocono Lake.

With the thought of other possible material from Pennsylvania, the Academy collection was thoroughly overhauled. Careful inspection, in a large herbarium, of the material of a critical genus like *Carex* is rarely unrequited by discoveries of interest, but seldom is a specifically desired specimen found. A search among the copious material, unnamed or awaiting examination before being distributed, was rewarded by the finding of a sheet of *Carex novae-angliae* collected by Mr. Stewardson Brown at Ganoga Lake in June, 1898. Mr. Brown, when his attention was directed to this specimen, distinctly recalled the circumstances of its collection, and was able to furnish some data of interest. The station was remembered as in beech woods which had been burned over, lying south of the Ganoga Hotel and toward Lake Leigh. In moist depressions in this woods the sedge was found growing very abundantly, occurring in large patches of lush growth — practically the dominant species of the woodland floor.

In correspondence concerning the southernmost authentic stations previously known, Prof. Fernald's interest was incited and he wrote of having the impression that Judge Churchill had obtained the species in northwestern Pennsylvania. Material was not to be found in the Gray Herbarium and Judge Churchill wrote that he did not have it in his own collection. To Prof. Fernald's continued interest is due the final discovery of the material in the large herbarium of Mr. Walter Deane of Cambridge, Massachusetts. The specimen, critically examined by Prof. Fernald, was collected by J. R. Churchill at Corry, Pennsylvania, June 1, 1893.

Among material recently collected on the Pocono Plateau by Mr. Harold W. Pretz and contributed to the Academy Herbarium an additional station for *Carex novae-angliae* was brought to my attention.

This is at Long Pond in Monroe County. Excellent specimens were obtained July 2, 1916. Mr. Pretz's station lies at the foot of Long Pond near the outlet stream. He writes, in further detail: "The sedge was found on a slight rise in the strip of low ground lying between the stream and the more elevated and drier plateau. Marshy ground lay within a few feet. The spot was comparatively free from underbrush, grassy, and lightly shaded. The plant grew in soft mats under a group of Pitch Pines, often quite near to the trunks."

These four stations all lie in the northern half of Pennsylvania over an approximately east and west line of about two hundred and thirty miles. Those at Pocono Lake and Long Pond are on the Pocono Plateau, within a comparatively short distance of each other, and in the same geographic area. That at Ganoga Lake lies some fifty miles west, in general, of the Pocono stations, well up on the main ridge of the Alleghanies. These localities are in the northeastern part of the state but that at Corry is in the elevated portion of northwestern Pennsylvania. Although in three somewhat different areas, the stations all lie at altitudes of between one thousand and two thousand feet, where the flora shows a rather distinctive Canadian element.

The nearest, previously known and formerly southernmost, stations for *Carex novae-angliae*, I learn from Prof. Fernald and Mr. Mackenzie, are in Norfolk, Connecticut¹ (the northwestern corner of the state, in Litchfield County) and at East Windham, New York² (in the Catskills). The important record by Hoysradt of the plant on Little Stissing Mountain, near Pine Plains, Dutchess County, New York³ is in all probability quite correct. In his Catalogue he states that his Carices were critically examined by William Boott, and furthermore this locality is not far distant from either the Norfolk or the East Windham stations. I am indebted to Prof. Fernald for verifying the Norfolk plant and to Mr. Mackenzie, the East Windham specimen.

For more concise reference these new records for *Carex novae-angliae* may be briefly summarized.

PENNSYLVANIA: Pocono Lake, Monroe County, June 18–21, 1907, B. Long; Long Pond, Monroe County, July 2, 1916, H. W. Pretz 8242;

¹ Bissell, RHODORA, xiii. 30 (1911).

² Mackenzie in Taylor, Fl. Vic. N. Y. 195 (1915).

³ Hoysradt, Cat. Pl. Pine Plains, N. Y., page xxvii (1875–79). Bull. Torr. Bot. Cl. vi. Supplement.

Ganoga Lake [Sullivan County], June, 1898, *S. Brown*; Corry [Erie County], June 1, 1893, *J. R. Churchill*.

Specimens of these collections, except the last cited, are in the Herbarium of the Academy of Natural Sciences and have received critical examination by Mr. Mackenzie.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

ANDROPOGON SCOPARIUS IN THE UNITED STATES AND CANADA.

F. TRACY HUBBARD.

THE marked variability of *Andropogon scoparius* is known to most collectors and different authors have described varieties and forms of the species, some of which have been raised to specific rank. With a view to classifying these variants a careful study of the species was undertaken at the suggestion of Prof. M. L. Fernald who has kindly given me his advice on numerous points. I am also indebted to Mr. Bayard Long for the loan of the material in the herbarium of the Academy of Natural Sciences of Philadelphia and to Miss K. D. Kimball of the New York Botanical Garden for notes on the type of *Andropogon littoralis*.

Many of the characters which have been used for separation of varieties or species do not prove constant enough, to have value in classification. This is the case with such features as the color of plant, length of sessile spikelet, villousness of sheaths and leaves, compression of sheaths and length of hairs at the apex of the internodes of the rhachis. Hackel in DC. Monogr. Phan. 6: 384 (1889) describes six forms or subvarieties (along some of these lines) which are scarcely determinable except in their extreme development. The species, however, seems to divide into three reasonably marked varieties: the common widespread form with glabrous sheaths and open, elongated inflorescence which intergrades with the other two forms; the second or typical form also with an open, elongated inflorescence, described by Michaux Fl. Bor. Am. 1: 57 (1803) "A vaginis villosis," and thus at once recognizable as the villous-sheathed form; the third form